

VII. ABSTRACT

- A molecular weight- polarity map having solvent tuned contour lines (2) defining a core material solubility region (1) within which molecular weight - polarity coordinate locations (3) for components of hydrocarbon materials reside. Unimodal characteristics
- 5 provide ascertainable indica of stability or thresholds of instability used to assess the proximity of the unimodal characteristics associated with hydrocarbon materials to formation of multimodal characteristics. The invention may be used to evaluate suitability of such hydrocarbon materials to various types of processing methodologies, or to determine processing parameters, either prior to processing or during processing.
- 10 Prediction of proximity to formation of multimodal characteristics may result in continuous process parameters, or increased output, decreased energy use or decreased amount of emissions per unit of such hydrocarbon materials compared to conventional processing technology. Unimodal products produced or unimodal products processed with this technology may also have a higher level of purity.